2 BACKGROUND AND DESCRIPTION OF THE PROPOSED PROJECT

This chapter provides background information about the function and types of OWTS, the types of issues involved with wastewater treatment systems in California, the existing regulatory structure, the rationale behind the passage of AB 885, and statutes related to the issuance and waiver of WDRs. The proposed draft regulations developed by the State Water Board (which are provided in Appendix C) are summarized according to the seven primary points identified in the legislation. Alternatives to the proposed project, which will be evaluated in the EIR, are also described.

2.1 BACKGROUND: OWTS REGULATION AND OPERATION IN CALIFORNIA

The purpose of this section is to provide the reader with a brief overview of a number of important topics related to the issues addressed by AB 885, including WDRs and waivers of WDRs. These topics are also fundamental to understanding the intent and responsibilities of the State Water Board and Regional Water Boards as they implement the proposed statewide OWTS regulations required by AB 885 and included in Appendix C. All of the topics addressed in this section will be described in more detail in the OWTS Regulations EIR.

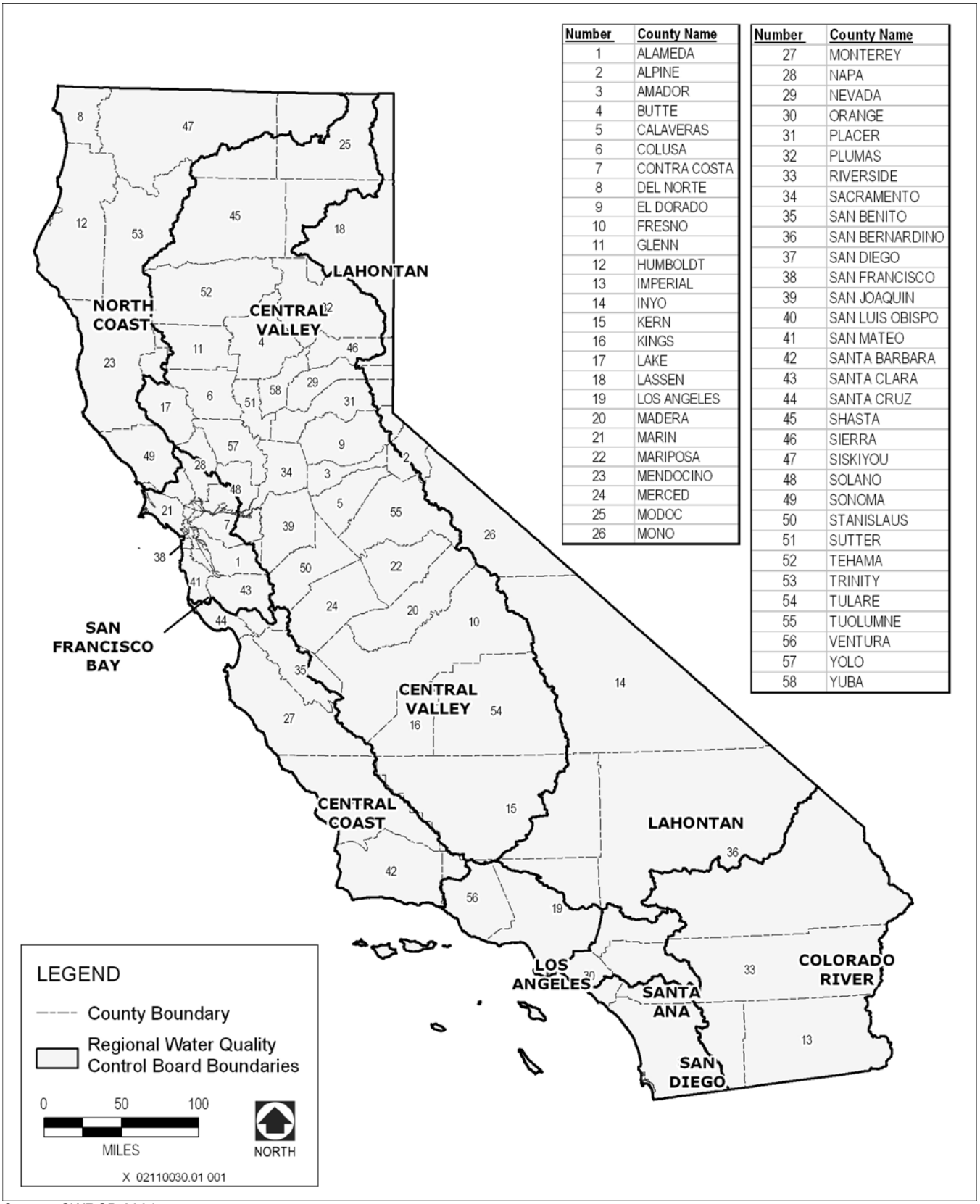
2.1.1 REGULATORY SETTING AND THE NEED FOR STATEWIDE REGULATIONS

The existing regulatory framework surrounding installation, operation, and maintenance of OWTS is complex and varies at the regional and local levels throughout California. This section provides a brief overview of this setting to help the reader understand one of the driving forces behind the intent of AB 885.

A broad network of federal and state laws provides the State Water Board, Regional Water Boards, California Department of Health Services, and local environmental and public health agencies with the authority to protect beneficial uses of water, including the protection of drinking water and public health, by regulating OWTS discharges and other sources of contaminants that have the potential to cause adverse water quality effects. These laws include the Federal Water Pollution Control Act of 1972 (Clean Water Act), Safe Drinking Water Act of 1974, subsequent amendments to these laws, and California's Porter-Cologne Water Quality Control Act of 1969 (Water Code Section 13000 et seq.), its subsequent amendments and related state policies.

California has nine Regional Water Boards (see Exhibit 1) that work independently of each other but in cooperation with the environmental and public health agencies of the counties, cities, and, in some cases, special districts that have been created to help regulate or finance OWTS. As further described below, the Regional Water Boards often rely upon these local agencies to help them implement and enforce OWTS-related policies and regulations.

In accordance with Section 13260 of the Water Code, anybody proposing to discharge waste that may adversely affect surface waters or groundwater of California must file a report of waste discharge with the local Regional Water Board. OWTS discharge waste, which may adversely affect surface waters and groundwater of the state; therefore, they are subject to regulation by the appropriate Regional Water Board. After considering the report of waste discharge, the Regional Water Board may issue WDRs that may include certain terms and conditions as allowed under Section 13263 of the Water Code and designed to protect beneficial uses and comply with applicable water quality objectives specified in its water quality control plan (or basin plan).



Number	County Name
1	ALAMEDA
2	ALPINE
3	AMADOR
4	BUTTE
5	CALAVERAS
6	COLUSA
7	CONTRA COSTA
8	DEL NORTE
9	EL DORADO
10	FRESNO
11	GLENN
12	HUMBOLDT
13	IMPERIAL
14	INYO
15	KERN
16	KINGS
17	LAKE
18	LASSEN
19	LOS ANGELES
20	MADERA
21	MARIN
22	MARIPOSA
23	MENDOCINO
24	MERCED
25	MODOC
26	MONO

Number	County Name
27	MONTEREY
28	NAPA
29	NEVADA
30	ORANGE
31	PLACER
32	PLUMAS
33	RIVERSIDE
34	SACRAMENTO
35	SAN BENITO
36	SAN BERNARDINO
37	SAN DIEGO
38	SAN FRANCISCO
39	SAN JOAQUIN
40	SAN LUIS OBISPO
41	SAN MATEO
42	SANTA BARBARA
43	SANTA CLARA
44	SANTA CRUZ
45	SHASTA
46	SIERRA
47	SISKIYOU
48	SOLANO
49	SONOMA
50	STANISLAUS
51	SUTTER
52	TEHAMA
53	TRINITY
54	TULARE
55	TUOLUMNE
56	VENTURA
57	YOLO
58	YUBA

Source: SWRCB 2001

Regional Water Quality Control Board and County Boundaries **Exhibit 1**

Water Code Section 13269 allows Regional Water Boards to waive WDRs for specific discharges or types of discharges. Until recently, many WDRs, including those for OWTS, agricultural, and stormwater discharges, were often informally waived by Regional Water Boards. In 2000, amendments to Section 13269 essentially terminated pre-existing waivers beginning January 1, 2003. Pre-existing waivers for OWTS were subsequently continued in effect until June 30, 2004, unless terminated by a Regional Water Board. Any waiver for OWTS adopted or renewed thereafter must be consistent with regulations or standards adopted pursuant to AB 885. In 2003, Section 13269 was further amended by the legislature to require that waivers of WDRs include monitoring to support the implementation of the waiver program. These Water Code amendments affect how Regional Water Boards can implement AB 885. For example, where a local agency seeks and is given authorization to administer implementation of the OWTS regulations, the Regional Water Board would waive waste discharge requirements and additionally require monitoring of OWTS unless it is determined that the discharge does not pose a threat to water quality.

AB 885 provides specific direction from the legislature to the State Water Board to provide uniform requirements related to minimum acceptable operation of OWTS, including standards for the protection of beneficial uses of potentially affected water. Typically, Regional Water Boards have adopted requirements for OWTS in their water quality control plans and have worked with local agencies (counties, cities, and special districts) through a formal or informal agreement. When a Regional Water Board and local agency enter into such an agreement, the local agency commits to help the Regional Water Board implement basin plan requirements at the local level.

The current practice of regulating OWTS has led to inconsistencies among the various Regional Water Boards and among the numerous local agencies in California's 58 counties. For example, while most counties have some type of minimum performance requirements and siting and design requirements specifically for OWTS, siting criteria, exemption criteria, corrective actions, and repair and replacement requirements vary greatly from one jurisdiction to another. In fact, California is one of only two states that do not have statewide OWTS regulations.

The inconsistency in regional and local OWTS requirements and related lack of statewide regulations, along with the public health and environmental issues summarized in Section 2.1.5 of this IS, are the primary reasons why AB 885 was introduced by Assemblymember Hannah Beth Jackson in February 1999, passed by the state legislature, and signed into law by Governor Gray Davis in September 2000.

2.1.2 HIGHLIGHTS OF ASSEMBLY BILL 885 AND RELATED STAKEHOLDER MEETINGS

AB 885 requires the State Water Board to develop statewide OWTS regulations in consultation with the California Department of Health Services (DHS), California Conference of Directors of Environmental Health (CCDEH), California Coastal Commission (CCC), counties, cities, and other interested parties. The State Water Board has held numerous meetings and discussions with agencies and stakeholders such as the U.S. Environmental Protection Agency (USEPA), DHS, CCC, CCDEH, the California Onsite Wastewater Association, the National Onsite Wastewater Recycling Association; and university departments performing related research.

AB 885 further requires the regulations to include, at a minimum, the seven types of requirements listed below (often referred to as AB 885's "seven points"):

1. Minimum operating requirements that may include siting, construction, and performance requirements
2. Requirements for OWTS adjacent to waters listed as impaired under Section 303(d) of the Clean Water Act
3. Requirements authorizing local agency implementation
4. Corrective action requirements
5. Minimum monitoring requirements

6. Exemption criteria
7. Requirements for determining when an existing OWTS is subject to major repair

As previously stated, AB 885 also requires the Regional Water Boards to incorporate the new statewide regulations into their basin plans. Neither the legislation nor the proposed OWTS regulations preempt the Regional Water Boards or any local agency from adopting or retaining performance requirements for OWTS that are more protective of public health or the environment than the new statewide regulations.

The proposed statewide OWTS regulations required by AB 885, included in Appendix C, and related implementation activities are the "proposed project" evaluated under CEQA in this IS and the forthcoming EIR.

2.1.3 CONVENTIONAL OWTS AND THEIR BASIC OPERATIONAL CHARACTERISTICS

OWTS treat wastewater and dispose of effluent for the approximately 1.2 million California households and numerous businesses that are not connected to sewer systems and related centralized municipal wastewater treatment plants (California Wastewater Training and Research Center and U.S. Environmental Protection Agency 2003). Thus, approximately 10% of all California households, or about 3.5 million people, rely upon some type of OWTS to treat and dispose of the wastewater they generate. According to the study cited above, the annual rate of growth in new OWTS installations is approximately 1% or 12,000 systems.

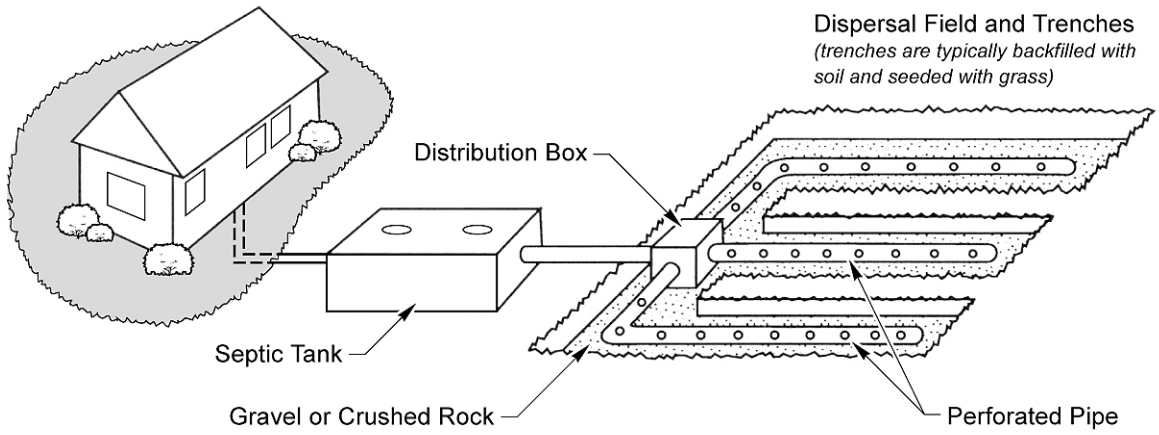
OWTS are defined by USEPA as systems "relying on natural processes and/or mechanical components that are used to collect, treat, and disperse/discharge wastewater from single family dwellings or buildings" (USEPA 2002). Most OWTS are commonly referred to as "septic systems"; however, many different types of systems exist, including conventional systems and a wide range of supplemental treatment systems that are capable of addressing different treatment needs and achieving different treatment levels.

The vast majority of existing OWTS are conventional systems. A conventional OWTS is depicted in Exhibit 2.

A conventional OWTS typically consists of a septic tank and a gravity-driven subsurface dispersal system, such as a leach field or a seepage pit. A conventional system may include septic tank effluent pumping where the dispersal field is located at a higher elevation than the associated septic tank, or a pressure distribution system, a mound system, or an at-grade system. If properly sited (i.e., with suitable soil and groundwater separation conditions), designed, installed, and operated, conventional systems are capable of nearly complete removal of suspended solids, biodegradable organic compounds, and fecal coliform bacteria. However, other pollutants may not be removed to acceptable levels. For example, conventional systems are expected to remove no more than 10–40% of the total nitrogen in domestic wastewater. Other pollutants that may not be removed include pharmaceuticals and other synthetic organic chemicals.

Proper site conditions are an important factor in ensuring the optimal functioning of an OWTS. Key issues that may affect the effectiveness of a treatment system and determine the need for additional treatment are the amount of separation between the bottom of the dispersal field and the level of saturated soil or the groundwater table, and the distance to nearby drinking water wells or surface waters. Private ("domestic") or public drinking water wells may be present on the same property as an OWTS or nearby. Depending on the direction of flow of groundwater, nearby wells may or may not be in the path of the contaminant plume from the OWTS discharge.

If properly sited and under appropriate conditions, unsaturated soil (referred to as the vadose zone) can significantly reduce the levels of human pathogenic organisms (viruses and bacteria) that reach the underlying groundwater table or surface water that is hydrologically connected to the groundwater. The depth and type of unsaturated soil below the dispersal system are important factors in the treatment process. Greater retention time of OWTS wastewater effluent in the vadose zone results in increased removal of pathogens.



Note: This is a schematic diagram that is not to scale

Source: Adapted from EPA 2002

Exhibit 2
Conventional System

2.1.4 SITE CONDITIONS AND USE OF SUPPLEMENTAL TREATMENT OWTS

Deep and biologically active soils with relatively long retention times are ideal conditions for the siting of OWTS. However, such conditions are not present in many areas of California. Areas of the state with relatively sandy soils can allow OWTS effluent to move fairly rapidly into local groundwater and other receiving waters with little retention time in the soil underlying dispersal fields. In areas with underlying fractured and granitic bedrock, it is almost impossible to accurately predict the travel time and likely pathway that OWTS effluent will take before it reaches groundwater. In areas with poorly draining clay soils, OWTS effluent can pool at the surface, thus creating potential public health problems through human contact.

When faced with less-than-ideal hydrogeologic and soil conditions, professional engineers, professional geologists, soil scientists, environmental health specialists, and others who site and design OWTS have an extensive assortment of supplemental treatment options to choose from for supplemental treatment along with dispersal, operational, and maintenance options. For example, in a recent report prepared for the State Water Board by the Department of Civil and Environmental Engineering at the University of California, Davis (UCD), the authors describe numerous types of technologies and OWTS-related management systems, including:

- options for reducing wastewater generation (including conservation),
- containment systems that do not generate waste,
- anoxic and anaerobic systems,
- attached and suspended growth aerobic treatment systems,
- natural treatment systems,
- disinfection systems, and
- monitoring and control systems (modified from Leverenz, Tchobanoglous, and Darby 2002).

The OWTS Regulations EIR will provide more information about conventional and supplemental treatment OWTS and how they operate.

2.1.5 PUBLIC HEALTH AND ENVIRONMENTAL ISSUES

The primary public health and environmental issues of concern associated with the use of OWTS are (1) direct human exposure to OWTS effluent surfacing above an improperly designed dispersal field; (2) degradation of

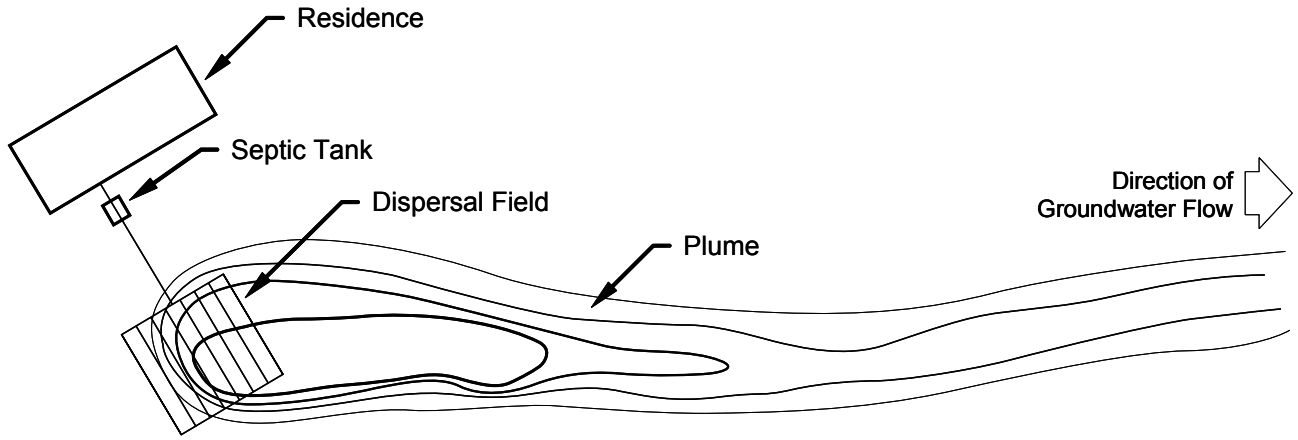
groundwater quality due to percolating OWTS effluent beneath the dispersal field; (3) degradation of surface water by groundwater affected by OWTS effluent; and (4) human exposure to affected groundwater or surface water, either through direct ingestion or through dermal contact.

DIRECT HUMAN EXPOSURE TO SURFACING EFFLUENT

Most "failures" of OWTS are reported as surfacing effluent above the dispersal field, allowing for the possibility of direct human contact with minimally treated sewage. The causes of such failures may be due to clogging of the dispersal system or the inability of soils in the OWTS dispersal field to percolate effluent downward. To avoid surfacing effluent, OWTS should be designed and sited to (1) prevent solids from passing from the septic tank to the dispersal field and (2) ensure that effluent application rates and soil conditions in the dispersal field will allow percolation.

GROUNDWATER DEGRADATION

In most hydrogeologic settings in California, percolating effluent from OWTS will reach groundwater. Once reaching the groundwater table, the OWTS effluent will move with groundwater flow as a contaminant plume. In general, contaminant plumes tend to be long, narrow, definable and exhibit little dispersion (USEPA 2002; see Exhibit 3). Groundwater within the contaminant plume will likely exceed water quality objectives for nitrate from conventional OWTS effluent and contain other dissolved contaminants or pathogens (viruses and/or bacteria) not removed by the OWTS.



Source: Adapted from USEPA 2002

Exhibit 3
Example of OWTS Effluent Plume Movement

SURFACE WATER DEGRADATION

OWTS effluent groundwater plumes and surfacing effluent from OWTS dispersal systems reaching adjacent surface water bodies (streams, lakes, marine waters) can cause pollution and endanger public health. The most common water quality objectives exceeded in surface waters due to OWTS discharges are for nitrogen and bacteria. Public health concerns are commonly associated with recreational contact of surface waters impaired by OWTS discharges.

HUMAN EXPOSURE TO OWTS-DEGRADED GROUNDWATER

Typical local codes specify a minimum 100-foot separation between an OWTS and a domestic drinking water well. OWTS effluent plumes in groundwater tend to remain relatively intact over long distances (for example, as reported in USEPA 2002, a 1995 study by Robertson and Cherry determined that such plumes can remain narrow and concentrated for more than 300 feet). In a fractured rock environment, OWTS effluent may travel much longer distances in rock fractures without dilution. Therefore, domestic water supply wells are vulnerable to contamination from OWTS effluent plumes. The degree of possible impact is dependent on a variety of factors, including local hydrogeology and whether hydrogeologic barriers (e.g., clay or hardpan) exist that separate shallow groundwater from the water-bearing zone from which the domestic well draws water, the degree to which the domestic well casing reaches and is sealed into a hydrogeologic barrier that prevents or impedes the downward migration of shallow groundwater, and the length and adequacy of the sanitary seal (if one exists) on the domestic well. Note that in fractured rock, hydrogeologic barriers do not exist and sanitary seals may be less protective than a groundwater table environment.

California has a large number of domestic drinking water wells (approximately 600,000, extrapolated from 1990 U.S. Census data) that may be vulnerable to contamination from the discharges of existing or yet-to-be-installed OWTS. While public wells are also vulnerable to contamination, they (unlike private wells) are tested regularly, are required to meet water quality standards, and often provide water that is subjected to additional treatment that protects consumers.

Table 1 summarizes the major types of pollutants found in OWTS discharges and briefly describes the primary reasons why pollutants such as pathogens and nitrogen are a concern.

2.1.6 ECONOMIC AND FISCAL ISSUES

OWTS are commonly financed as part of the construction costs of a new home or business. Conventional OWTS are the most common and generally least expensive systems to construct; supplemental treatment systems are becoming more commonplace in some areas of the state but also tend to be more expensive. In fact, the cost of installing supplemental treatment OWTS has been at least twice that of conventional OWTS. For example, the design, siting, and installation of conventional OWTS for residential construction projects typically range from $8,000 to $15,000, while supplemental treatment OWTS can cost $20,000–$30,000 or more depending on site conditions and which system is installed (Treinen, Bradley, and Lescure, personal communications, 2004).

Homeowners and business owners incur costs when they have to replace or repair an existing system. Lower income residents may have difficulty covering expensive repair or replacement costs.

AB 885 says it is the intent of the California legislature to provide private property owners with financial assistance for OWTS-related costs under certain situations and encourages the use of the State Revolving Fund Loan Program to address this concern.

2.2 PROJECT OBJECTIVES

Based on the requirements of AB 885 and the intent of the state legislature in drafting the legislation, and in the context of other state laws relating to wastewater discharge and water quality, the State Water Board has identified the following objectives for the proposed project:

1. As required by AB 885, adopt statewide OWTS regulations that are consistent with other provisions of the Porter-Cologne Water Quality Control Act and related state water quality control plans and policies adopted by the State Water Board.

Table 1
Typical Wastewater Pollutants of Concern

Pollutant	Reason for Concern
Total suspended solids (TSS) and turbidity (NTU)	In surface waters affected by surfacing OWTS effluent, suspended solids can result in the development of sludge deposits that smother benthic macroinvertebrates and fish eggs and can contribute to benthic enrichment, toxicity, and sediment oxygen demand. Solids also harbor bacteria. Excessive turbidity resulting from solids that remain suspended can block sunlight, harm aquatic life (e.g., by blocking sunlight needed by plants), and lower the ability of aquatic plants to increase dissolved oxygen in the water column. In drinking water, turbidity is aesthetically displeasing and interferes with disinfection.
Biological oxygen demand (BOD)	Biological stabilization of organics in the water column can deplete dissolved oxygen in surface waters, creating anoxic conditions harmful to aquatic life. Oxygen-reducing conditions in groundwater and surface waters can also result in taste and odor problems in drinking water.
Pathogens	Parasites, bacteria, and viruses can cause communicable diseases through direct and indirect body contact or ingestion of contaminated water or shellfish. A particular threat occurs when OWTS effluent pools on the ground surface or migrates to recreational waters. Transport distances of some pathogens (e.g., viruses and bacteria) in groundwater or surface waters can be significant.
Nitrogen	Nitrogen is an aquatic plant nutrient that can contribute to eutrophication and dissolved oxygen loss in surface waters, especially in lakes, estuaries, and coastal embayments. Algae and aquatic weeds can contribute trihalomethane (THM) precursors to the water column that may generate carcinogenic THMs in chlorinated drinking water. Excessive nitrate-nitrogen in drinking water can cause methemoglobinemia in infants and pregnancy complications for women. Livestock can suffer health impacts from drinking water high in nitrogen.
Phosphorus	Phosphorus is an aquatic plant nutrient that can contribute to eutrophication of inland and coastal surface waters and reduction of dissolved oxygen.
Toxic organic compounds	A variety of regulated organic compounds exist that cause direct toxicity to humans and aquatic life via skin contact and ingestion. Organic compounds present in household chemicals and cleaning agents can interfere with certain biological processes in alternative OWTS. They can be persistent in groundwater and contaminate downgradient sources of drinking water. Some organic compounds accumulate and concentrate in ecosystem food chains.
Heavy metals	Heavy metals like lead and mercury in drinking water cause human health problems. In the aquatic ecosystem, they are also toxic to aquatic life and accumulate in fish and shellfish that might be consumed by humans.
Dissolved inorganic compounds	Chloride and sulfide cause taste and odor problems in drinking water. Boron, sodium, chlorides, sulfate, and other solutes may limit treated wastewater reuse options (e.g., irrigation). Sodium and to a lesser extent potassium can be deleterious to soil structure and OWTS dispersal system performance.
Endocrine disruptor compounds (EDCs)	The presence of common hormones, drugs, and chemicals contained in personal care products (e.g., shampoo, cleaning products and pharmaceuticals) in wastewater and receiving water bodies is an emerging water quality and public health issue. Endocrine disruptor compounds (EDCs) are substances that alter endocrine system function and consequently cause adverse health effects to organisms or their progeny. Only recently has it been recognized that EDCs are present in water bodies of the U.S. at a high frequency; however, measured concentrations have been low and usually below drinking water standards for compounds having such standards. Specific studies have found EDCs in sufficient quantity that they could potentially cause endocrine disruption in some fish. The extent of human health risks and dose responses to EDCs in concentrations at the low levels found in the environment are still unknown.

Source: Adapted from USEPA 2002 and Tchobanoglous and Burton 1991.

2. Help ensure beneficial uses of the State's waters are protected from OWTS effluent discharges by achieving and protecting water quality objectives.

3. Establish an effective implementation process that considers economic costs, practical considerations for regional and local implementation, and technological capabilities existing at the time of implementation.

2.3 PROPOSED PROJECT

This section describes the major elements of the proposed project using a bulleted format and the "seven points" from AB 885 (i.e., the seven types of requirements that the state legislature determined must be included, at a minimum, in the new statewide OWTS regulations). Section references in the subheadings below are references to specific sections in the proposed draft regulations included in Appendix C.

As required by AB 885, the implementation of new statewide OWTS regulations will commence six months after the regulations are adopted by the State Water Board. The current State Water Board rulemaking schedule assumes that these regulations will be adopted by the summer of 2006. Therefore, the regulations will be implemented in early 2007, with the exception of some specific requirements for water bodies listed as impaired under Section 303(d) of the Clean Water Act. Those waters and related implementation timeframes are addressed under Point 2, Section 2.3.2 of the IS below.

The proposed regulations would continue to rely upon the regional water boards for regional and local implementation. As they do now, the regional water boards may enter into formal agreements with authorized local agencies (ALAs) to allow ALAs to implement and enforce the proposed regulations summarized in this section. The proposed regulations would not prevent regional water boards or ALAs from adopting their own OWTS requirements that are at least as protective of the environment and public health as the proposed regulations; the proposed regulations would be the minimum requirements for OWTS installation, operation, and maintenance throughout the state.

As required by AB 885, the proposed regulations would apply to all of the following types of OWTS:

- any system that is constructed or replaced;
- any system that is subject to a major repair (as defined in the proposed regulations);
- any system that pools or discharges effluent to the surface; and
- any system that, in the judgment of a Regional Water Board or ALA, has the reasonable potential to cause a violation of water quality objectives or to impair present or future beneficial uses of water, or to cause pollution, nuisance, or contamination of the waters of the state.

In some cases, such as groundwater monitoring and septic tank inspections, the proposed regulations would impose new requirements. In other cases, elements of the proposed regulations may already be in use at the regional or local level, but may vary around the state. The EIR will define the existing regulatory setting at the regional and local levels in more detail and will provide examples of representative regulations from various areas for comparative purposes.

2.3.1 POINT 1: MINIMUM OPERATING REQUIREMENTS

The subsections that follow summarize the minimum operating requirements contained in the proposed regulations; these include siting, construction, and performance requirements. Operating permits for new conventional systems are not required in the proposed regulations if the Regional Water Board or ALA does not otherwise require them. The regulations require new operating permits for all new OWTS with supplemental

treatment units or those OWTS subject to major repair that incorporate supplemental treatment units. (The term "major repair" is defined under Point 7, Section 2.3.7 of the IS below.) The operating permits would be transferred during real estate transactions from the previous OWTS owner to the new owner of the permitted OWTS.

SITE EVALUATION REPORTS TO BE SUBMITTED WITH PERMIT APPLICATIONS (SEE SECTIONS 22901 AND 22955)

All persons intending to construct, repair, or replace any OWTS would be required to prepare and submit a site evaluation report with their permit application (if the Regional Water Board or ALA requires an application). Such applications would be submitted to the appropriate Regional Water Board or ALA and must follow extensive content requirements as specified in Section 22955. These site evaluation report requirements only apply to property owners or their representatives within the jurisdiction of Regional Water Boards or ALAs that require permit applications for OWTS.

ADDITIONAL REQUIREMENTS FOR ALL SYSTEMS, INCLUDING EXISTING OWTS (SEE SECTION 22910[C])

OWTS effluent must be below "high-strength waste" levels and OWTS may not:

- discharge effluent to land surface,
- become a source of disease vectors (e.g., insects or rodents), or
- be the source of nuisance odors.

ADDITIONAL REQUIREMENTS FOR NEW SYSTEMS AND SYSTEMS SUBJECT TO MAJOR REPAIR (SEE SECTION 22910)

The requirements listed in Section 22910 apply to all new OWTS and to existing systems subject to major repair, which include but are not limited to OWTS that are in a failure condition. Specific definitions for "major repair," "failure" and "new OWTS" are included in Section 22900, along with other important definitions. System failure includes conditions where OWTS effluent is causing a nuisance or health hazard or where such effluent is causing a violation of applicable water quality objectives. Some of the requirements in Section 22910 summarized below also apply to OWTS on existing properties undergoing transfer of ownership.

Other requirements included in this section of the proposed regulations are highlighted below:

- The appropriate characteristics of wastewater from OWTS are those associated with domestic wastewater, commercial wastewater that excludes hazardous waste, nonresidential wastewater pretreated to be below high-strength wastewater levels, and nonresidential wastewater with pollutants segregated. Chemical wastes from holding tanks, recreational vehicles, and portable toilets are excluded.

- OWTS shall be designed to remove or reduce biological oxygen demand (BOD), total suspended solids (TSS), and pathogenic organisms (such as coliform bacteria).

- OWTS shall be designed to prevent solids greater than 1/8 inch in diameter from passing to the dispersal system. The use of certain septic tank filters can allow property owners to comply with the requirements of this section.

- Systems shall disperse effluent to subsurface soils in a manner that provides unsaturated zone treatment and aerobic decomposition of effluent.

- Only "qualified professionals," as defined in Section 22900, can evaluate or design new and repaired OWTS. Such professionals must also prepare operations and maintenance manuals for property owners along with a "Record Plan" to help ensure that OWTS are properly operated and maintained. Only licensed contractors (Class A or Specialty Class C-42) may construct new OWTS.

- All owners of septic tanks must have their tanks inspected by a qualified service provider upon transfer of property ownership to ensure the tank is performing properly.

- All OWTS owners with domestic wells on their properties, or with domestic wells adjacent to their properties, must monitor groundwater in the vicinity of the OWTS discharge upon installation of a new OWTS or transfer of property ownership. Groundwater samples must be collected and analyzed either from groundwater monitoring wells that are down-gradient from the OWTS or from an onsite domestic well. This requirement is waived if no domestic well is located on-site and property owners deny access to adjacent domestic wells. Section 22910(v) includes requirements related to how the groundwater samples would be analyzed. Certified laboratories analyzing the water samples would report the results electronically to the State Water Board's groundwater database. Homeowner name and address information would not be accessible to the general public. Section 22910(u) of the proposed regulations contains a number of conditions that would exempt OWTS owners from this requirement; these conditions are summarized in Section 2.3.5 below.

- Where natural percolation rates are high (less than 5 minutes per inch) and there is less than 5 feet of separation to seasonal high groundwater below the dispersal area, the effluent from new OWTS shall use supplemental treatment to help ensure pathogen reductions occur.

SEPTIC TANK SPECIFICATIONS (SEE SECTION 22911)

This section of the proposed regulations includes a number of technical specifications that new or replaced septic tanks must meet.

REQUIREMENTS FOR SUPPLEMENTAL SYSTEMS (SEE SECTION 22912)

This section applies to all new OWTS using supplemental treatment systems. Key elements of this section include the following:

- There must be at least 2 feet of unsaturated soil below the dispersal system and above seasonal high groundwater or impermeable strata or fractured/weathered bedrock.

- The effluent must meet a number of specified performance requirements prior to entering the dispersal field (the 30-day average of the samples shall not exceed 30 mg/l BOD [or alternately, 25 mg/l CBOD] and 30 mg/l TSS.

- Where nitrogen is a water quality concern, the effluent must meet a 10-mg/l nitrogen standard before it enters the dispersal field.

- All supplemental treatment components must be certified by a third-party testing laboratory or designed by a registered professional engineer.

- Effluent, before discharge to the dispersal field, must be evaluated at least on a quarterly basis and a representative sample must be analyzed by a laboratory certified by the California Department of Health Services (DHS).

- All owners of supplemental treatment OWTS must obtain an operating permit from the Regional Water Board or ALA. Such permits shall require permit holders to maintain contracts with qualified service providers for the operation, maintenance, and monitoring of the OWTS.

REQUIREMENTS FOR NEW DISPERSAL SYSTEMS (SEE SECTION 22914)

New requirements in this section of the proposed regulations include the following:

- Qualified professionals shall "exercise all feasible design options to assure that the base of the dispersal system lies at the shallowest practicable depth at or below the original elevation of the soil surface to maximize elements critical to effective treatment of effluent in the soil (e.g., oxygen transfer, biological treatment, and vegetative uptake of nutrients)" (Section 22914[a]).

- New conventional systems must have 5 feet of continuous unsaturated soil below the dispersal system and above seasonal high groundwater or fractured/weathered bedrock, unless determined otherwise by the ALA or Regional Water Board. These agencies may allow less than 5 feet, but not less than 3 feet, if a qualified professional can demonstrate that water quality in the immediate vicinity will not be impaired by pathogens from the OWTS.

- Specific dispersal systems have prescriptive requirements, including vertical separation and unsaturated soil depths, and design application rates.

- Dispersal systems with pumps must have failure alarms and be able to deal with 24 hours of failure without overflow or bypass.

2.3.2 POINT 2: REQUIREMENTS FOR IMPAIRED WATERS, INCLUDING CLEAN WATER ACT SECTION 303(D)-LISTED WATERS (SEE SECTIONS 22940 AND 22945)

Section 22940 includes requirements that pertain to all OWTS within 600 feet of impaired surface water (as defined in Section 303[d] of the federal Clean Water Act) and where OWTS have been identified by a Regional Water Board as contributing to the specific impairment of that surface water. The ALA or Regional Water Board may establish a greater or lesser distance requirement than 600 feet based upon the results of a groundwater monitoring report. Some of these requirements are proposed to take effect in January 2007 and others are proposed to take effect in January 2009, but all of them involve mandatory use of supplemental treatment. The specific performance requirements that apply to the required supplemental treatment vary, depending on whether nitrogen or pathogens are the reason OWTS are contributing to impairment of surface water. These dates can be extended if total maximum daily load standards (TMDLs) are expected to be adopted by January 31, 2009, but the TMDL implementation dates cannot be extended beyond December 31, 2015. OWTS owners committing to connect to community wastewater systems by the end of 2015 are exempt from this section's requirements under certain conditions.

In areas where OWTS have been identified by a Regional Water Board as contributing to groundwater impairment (i.e., a violation of water quality objectives) or contamination, the ALA and Regional Water Board shall identify corrective actions and an implementation schedule. Corrective actions to be considered may include, but are not limited to, those listed below from Section 22945:

- Increased oversight of OWTS
- Preparation of a cumulative impact analysis
- Use of a centralized wastewater collection system
- Enactment of a building moratorium
- Mandate for the use of supplemental treatment for new and existing OWTS

2.3.3 POINT 3: REQUIREMENTS AUTHORIZING LOCAL IMPLEMENTATION

The proposed regulations allow cities, counties, or other responsible management agencies (referred to as ALAs) to administer the new OWTS regulations by entering into an MOU with the Regional Water Board, or through an adopted resolution by the Regional Water Board. Once this relationship is authorized, implementation by the ALA must be reviewed by the Regional Water Board every 5 years and can be terminated by the Regional Water Board with 90 days' notice.

2.3.4 POINT 4: REQUIREMENTS FOR CORRECTIVE ACTIONS

Under the proposed regulations, ALAs or Regional Water Boards would notify OWTS owners of noncompliance with the proposed regulations and direct corrective action within a specified time (Section 22902). Also, as described in Section 2.3.2 regarding Point 2 above, Sections 22940 and 22945 of the proposed regulations identify corrective actions that may be taken in areas with impaired surface water or groundwater.

2.3.5 POINT 5: MINIMUM MONITORING REQUIREMENTS

Section 22910(u) of the proposed regulations requires owners of OWTS with on-site domestic wells on their properties, or with domestic wells adjacent to their properties, to sample and analyze groundwater quality in the vicinity of the OWTS discharge; this requirement applies upon installation of new OWTS or transfer of ownership of properties containing OWTS. The Regional Water Board may also require groundwater monitoring prior to property transfers, or at any other time, when the Regional Water Board has reason to believe an OWTS-related water quality problem exists.

Monitoring that is carried out either for installation of a new OWTS or upon transfer of property ownership will provide a level of information not now available and the level of information will increase each year. Given the uncertainty of property transfers, the level of information provided may vary greatly from place to place and from year to year. Since more densely populated areas will have more transfers, monitoring should occur more often in areas posing a higher water quality threat. While such a monitoring effort appears consistent with Water Code Section 13269(a)(2) and (3), it can be argued that a more comprehensive monitoring effort is needed.

Exemptions from groundwater monitoring would be allowed if any of these conditions apply:

- The facility served by the OWTS gets its drinking water from a community water supply system.
- With the concurrence of the Regional Water Board, a study indicates that no violation of water quality objectives from the OWTS discharge is anticipated over the life of the OWTS.

As noted in Section 2.3.1 regarding Point 1 above, Section 22912(f) of the proposed regulations requires supplemental treatment systems to undergo effluent monitoring on a quarterly basis, or more frequently.

Section 22910(s) would require owners of OWTS to have their septic tanks inspected upon transfer of property ownership, and Section 22910(t) would require visual inspections of systems for malfunctions whenever septic tanks are pumped. Sections 22910(p) and (q) allow ALAs and Regional Water Boards to inspect any OWTS permitted under the new regulations or to evaluate their performance.

2.3.6 POINT 6: EXEMPTION CRITERIA

In accordance with Section 22947, the proposed regulations would allow each Regional Water Board to amend its water quality control plan (basin plan) to establish criteria and procedures for exemptions to the new regulations;

however, such exemptions may not be less protective of water quality or human health than the proposed regulations would be (if adopted).

Criteria for exemptions to the groundwater monitoring requirements are described in Section 2.3.5 addressing Point 5 above.

2.3.7 POINT 7: REQUIREMENTS FOR DETERMINING WHEN A SYSTEM IS SUBJECT TO MAJOR REPAIR

Major repair is defined in Section 22900 of the proposed regulations as enlargement of an OWTS or corrective work needed to correct a condition of failure. "Failure" is defined in the same section as a condition where an OWTS "causes or threatens to cause impairment of beneficial uses of surface water or groundwater or threatens public health." Examples of failures include:

- Domestic wastewater backing up into a structure caused by slow soil absorption of septic tank effluent or a mechanical malfunction;
- Domestic wastewater from an OWTS discharging to the ground surface or groundwater and causing pollution or nuisance or posing an immediate health hazard; and
- Violation of water quality objectives for surface water or groundwater as established in basin plans.

2.4 ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the State CEQA Guidelines requires that a draft EIR must describe a reasonable range of alternatives to the proposed project that could feasibly enable the project's basic objectives to be met while substantially reducing or avoiding any of the significant environmental effects of the proposed project. This section describes the alternatives to the proposed project that are proposed for evaluation in the EIR. These alternatives will be defined in more detail and assessed in the EIR. They have been identified by the State Water Board using input received from a number of stakeholder meetings and other discussions with stakeholders, including conversations with the Regional Water Boards and local, state, and federal agencies. Additional comments received during the EIR's scoping process will be used by the State Water Board to determine if the alternatives described below are sufficient as defined, if any of the alternatives should be modified, or if additional alternatives should be considered in the EIR.

The alternatives to the proposed project described in the subsections that follow include two alternative regulatory approaches, alternative regulations proposed by one of the major stakeholder groups (CCDEH), and two No-Project Alternatives.

The State Water Board believes that the proposed project, the other regulatory alternatives described below, and the two No-Project Alternatives adequately cover the full range of alternatives needed "to foster meaningful public participation and informed decision making" and should be sufficient to "permit a reasoned choice" (as required by State CEQA Guidelines Section 15126.6[f]).

2.4.1 NO-PROJECT ALTERNATIVE WITH STATUS QUO

As noted in Section 15126.6(e)(1) of the State CEQA Guidelines, "the purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." The impacts of not approving the proposed project would depend on which of two different but possible scenarios would take place if the proposed project is not adopted and implemented. The first possible scenario would involve continuation of the status quo as further described in this section.

Because AB 885 (Water Code Section 13291) requires the State Water Board to develop new statewide regulations, the No-Project Alternative with Status Quo assumes that the state legislature would pass new legislation that is signed by the Governor and voids the requirement to develop new statewide OWTS regulations.

Under the No-Project Alternative with Status Quo, the existing regulatory setting would continue into the future. No new statewide OWTS regulations would be implemented; existing requirements in Regional Water Board basin plans and local agency ordinances and policies would continue to vary from one jurisdiction to another and would be the primary means by which OWTS are regulated. Other important assumptions that will be used to define the No-Project Alternative with Status Quo in the EIR are listed below.

- The TMDL water quality standards development process already underway, and led by the Regional Water Boards, may lead to additional restrictions on OWTS discharges adjacent to 303(d)-listed surface water bodies. New requirements for OWTS adjacent to Clean Water Act Section 303(d)-listed waters, or contributing to their impairment, would not be implemented under this alternative.

- As noted above, OWTS siting, design, and construction requirements would continue to vary considerably among local agencies and Regional Water Boards. Other key elements of regional and local requirements also would continue to vary: corrective actions, exemption criteria, minimum monitoring requirements, and requirements for determining when a system is subject to major repair.

2.4.2 NO-PROJECT ALTERNATIVE WITH STATEWIDE REQUIREMENTS

Because the state legislature may not wish to pass new legislation that supersedes AB 885 and removes the statewide regulations requirements of Water Code Section 13291, a second No-Project Alternative will also be defined and addressed in the EIR. The No-Project Alternative with Statewide Requirements assumes that the State Water Board would still need to meet the AB 885 requirement to develop new statewide OWTS requirements, even if it does not adopt and implement the proposed project being evaluated in the EIR. However, much uncertainty surrounds what course of action the State Water Board would take under such a scenario, and the State Water Board's other possible courses of action are already well-represented by the other project alternatives described below. Therefore, the EIR will likely include only a brief assessment of this No-Project Alternative since this alternative is speculative and a detailed analysis would not be meaningful. In other words, it is not possible to predict what regulations might be adopted and implemented in lieu of the regulations proposed as part of the proposed project or instead of those that would be associated with the other alternatives described below.

2.4.3 PRESCRIPTIVE ALTERNATIVE

GENERAL REGULATORY APPROACH AND MINIMUM OPERATING REQUIREMENTS

The prescriptive regulatory approach is often called the "one size fits all" approach with respect to conventional systems. Although this is an oversimplification, this approach puts a heavy emphasis on standard and extensive requirements for conventional OWTS and is primarily based on the existing California Plumbing Code. Many of this alternative's prescriptive requirements are already in place in most of California's counties. Similar to the proposed project, this alternative relies on prescriptive requirements for conventional OWTS and performance requirements when conventional OWTS cannot be used. Unlike the proposed project, this alternative has more extensive prescriptive requirements for siting, designing, and constructing conventional systems and also differs in other respects as summarized below. This alternative is represented by an early draft of the OWTS regulations distributed to stakeholders in January 2003.

The following sections highlight how this alternative would vary from the proposed project in other respects. Unless otherwise noted, the other elements of this alternative would be the same as or similar to the corresponding elements of the proposed project.

REQUIREMENTS RELATED TO CLEAN WATER ACT 303(D)-LISTED WATERS

Where nitrogen or bacteria from OWTS have been shown to contribute to the impairment of a 303(d)-listed water body, this alternative would require the owners of OWTS to take steps to reduce the amount of pollutants being discharged, as required by the ALA or Regional Water Board. Unlike the proposed project, this requirement would not be limited to OWTS within 600 feet of an impaired water body, but would apply to all OWTS that can potentially contribute to impairment of the water body in question.

MINIMUM MONITORING REQUIREMENTS

While this alternative does not include the groundwater monitoring requirements included in the proposed project, it does include various types of operating inspections, including inspection of effluent filters, certain types of dispersal systems, and grease interceptors. The time intervals for the different types of inspections would vary by system component and would be specified in an operations and maintenance manual. This alternative does not include ongoing inspections of existing or new septic tanks.

2.4.4 PERFORMANCE AND MONITORING ALTERNATIVE

GENERAL REGULATORY APPROACH AND MINIMUM OPERATING REQUIREMENTS

As with the proposed project and other EIR alternatives described in this section, this alternative relies on performance requirements for supplemental treatment OWTS, but differs from the other alternatives in a number of ways. Unlike the proposed project which requires groundwater monitoring and septic tank inspections upon transfer of property ownership, this alternative would establish mandatory and periodic groundwater monitoring and septic tank inspections. This alternative would also require all new OWTS, along with existing conventional systems undergoing major repair, to include supplemental treatment units by 2009. Finally, all existing OWTS would need to be upgraded with supplemental treatment units within 15 years from the date the regulations are adopted by the State Water Board. The following sections provide additional information regarding how this alternative would vary from the proposed project. Unless otherwise noted, the other elements of this alternative would be the same as or similar to the corresponding elements of the proposed project.

REQUIREMENTS FOR CORRECTIVE ACTIONS

As with the other alternatives, this alternative would require ALAs or Regional Water Boards to notify the owners of failing OWTS and would require them to take corrective actions. This alternative differs in that the corrective actions themselves would likely involve requiring the owners of both new conventional and new supplemental treatment OWTS to comply with performance requirements (while the other alternatives would require the owners of conventional systems to comply with prescriptive requirements). Since new or repaired conventional systems would likely have trouble complying with performance requirements, most owners of such conventional systems would likely have to augment those systems with supplemental treatment units.

MINIMUM MONITORING REQUIREMENTS

Like several of the other alternatives, this alternative requires monitoring of supplemental treatment effluent at a point prior to discharge to the dispersal field. Unlike the other alternatives, this alternative includes ongoing inspections of existing or new septic tanks every five years.

This alternative would require owners of OWTS with onsite domestic wells to sample and analyze groundwater quality in the vicinity of the OWTS discharge using the same reporting requirements as contained in the proposed project. For existing systems, such sampling would begin within 2 years of the regulations' implementation; for new systems, this would begin within 30 days of installation. Thereafter, such sampling would be required for all

conventional OWTS every 5 years. This level of monitoring has been deemed to satisfy the monitoring requirements for waivers pursuant to Water Code Section 13269.

REQUIREMENTS FOR DETERMINING WHEN A SYSTEM IS SUBJECT TO MAJOR REPAIR

As with all of the other alternatives that include the implementation of new statewide regulations, this alternative includes a definition of what constitutes a "major repair." This alternative differs, however, in that owners of conventional systems that fail (the primary circumstance under which a major repair is required) would be required to meet more stringent performance requirements (as described above in "Requirements for Corrective Actions").

2.4.5 CCDEH ALTERNATIVE REGULATIONS

This alternative was distributed to a stakeholder group by CCDEH in February 2003 as a CCDEH-proposed replacement for the State Water Board's January 2003 draft regulations. The primary areas in which this alternative differs from the alternatives described above are summarized below.

GENERAL REGULATORY APPROACH AND MINIMUM OPERATING REQUIREMENTS

As with all of the other alternatives that include new statewide OWTS regulations, except for the Performance and Monitoring Alternative, this alternative uses prescriptive requirements for conventional systems and performance requirements for supplemental treatment systems. This is the only alternative that includes a "model" or "standard" MOU to be used by all Regional Water Boards for delegation of some of their OWTS regulatory authority to ALAs.

REQUIREMENTS RELATED TO CLEAN WATER ACT SECTION 303(D)-LISTED WATERS

The CCDEH Alternative would require any OWTS "adjacent to" a Section 303(d)-listed water body to be designed to achieve treatment of the pollutant of concern, with specific actions described in the proposed regulations. The key term "adjacent to" is defined as within 250 feet of the impaired water body, or as otherwise designated by the Regional Water Board.

MINIMUM MONITORING REQUIREMENTS

This alternative does not include groundwater quality monitoring or ongoing inspections of existing or new septic tanks, as included in the proposed project. This alternative includes unspecified monitoring for OWTS that have renewable operation permits (e.g., OWTS with supplemental treatment units).

EXEMPTION CRITERIA

This alternative requires the Regional Water Boards to define exemption criteria in the standard MOU to be used with ALAs. The standard MOU would also define the process by which Regional Water Boards would apply the criteria and grant exemptions.